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EXAMINER	
LOO, JUVENA W	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/524,066	AMAGAI, MITSUO
	Examiner	Art Unit
	Juvena W. Loo	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :February 08, 2005 and July 06, 2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 – 28 are rejected under 35 U.S.C. 103(a) as being obvious over Giorgetta et al. (US 7,035,292 B1) in view of Ghiasi (US 6,546,345 B1).

Giorgetta et al. discloses a method for organizing a communications frame structure with selectable synchronization words comprising the features:

As per claim 1, *a trigger signal generating apparatus comprising:*

a frame synchronous circuit which receives a frame signal having predetermined bit rate and outputs a synchronous signal in synchronism with an input timing of leading data of the frame signal (Giorgetta: see Figure 10, steps 204 and 206; see also "The synchronization...synchronization bits" in column 9, lines 43 - 60);

a position information output circuit which receives the synchronous signal output by the frame synchronous circuit and outputs position information indicating an input bit position of the frame signal (Giorgetta: see Figure 10, step 208; "Step 208 organizes...in header sections" in column 10, lines 31 - 42);

a position designator which designates an arbitrary bit position of the frame signal (Giorgetta: see Figure 7 and "The organization...in the header section" in column 10, lines 59 - 66).

However, Giorgetta does not disclose the feature: *a trigger signal generating circuit which outputs a trigger signal at a timing when the position information output by the position information output circuit is coincident with the arbitrary bit position designated by the position designator.*

Ghiasi discloses a system and method of measuring extinction ratio and deterministic jitter of an optical transceiver comprising the features: *a trigger signal generating circuit which outputs a trigger signal at a timing when the position information output by the position information output circuit is coincident with the arbitrary bit position designated by the position designator* (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Giorgetta by using the features, as taught by Ghiasi, in order to have a fast and accurate way to measure data dependent jitter (Ghiasi: column 2, lines 13 - 14).

As per claim 2, *wherein the frame signal having the predetermined bit rate is a frame signal transmitted through a digital synchronous network* (Giorgetta: see "The S3062 is used...test equipment" in column 3, lines 56 – 59).

As per claim 3, *wherein the frame signal transmitted by the digital synchronous network is that of one of the digital synchronous transmission systems including a synchronous digital hierarchy (SDH), synchronous optical network (SONET) and optical transport network (OTN)* (Giorgetta: see "The S3062 is used...test equipment" in column 3, lines 56 – 59).

As per claim 4, *wherein when the frame signal transmitted by the digital synchronous network is associated with one of the digital synchronous transmission systems including SDH, SONET and OTN, the arbitrary bit position designated by the position designator is a specified part of an overhead of the frame signal of the digital synchronous transmission system* (Giorgetta: see "The organization...in the header section" in column 10, lines 59 - 66).

As per claim 5, *wherein the specified part of the overhead of the frame signal of the digital synchronous transmission system is not scrambled* (Giorgetta: see "All the bytes...can be completed" in column 26, lines 46 – 49).

As per claim 6, *further comprising: a clock recovery circuit which receives the frame signal having the predetermined bit rate and recovers and outputs a clock from the frame signal* (Giorgetta: see Figure 1, CDR 14 and "Data is received from an optic

fiber and passed through a clock/data recovery device (CDR)" in column 3, lines 36 – 37).

As per claim 7, *a frame signal waveform observation apparatus comprising*:

a trigger signal generating apparatus comprising;

a frame synchronous circuit which receives a frame signal having a predetermined bit rate and outputs a synchronous signal in synchronism with an input timing of leading data of the frame signal (Giorgetta: see Figure 10, steps 204 and 206; see also "The synchronization...synchronization bits" in column 9, lines 43 - 60), *a position information output circuit which receives the synchronous signal output by the frame synchronous circuit and outputs position information indicating an input bit position of the frame signal* (Giorgetta: see Figure 10, step 208; "Step 208 organizes…in header sections" in column 10, lines 31 - 42), *a position designator which designates an arbitrary bit position of the frame signal* (Giorgetta: see Figure 7 and "The organization...in the header section" in column 10, lines 59 - 66).

However, Giorgetta does not disclose the features: *a trigger signal generating circuit which outputs a trigger signal at a timing when the position information output by the position information output circuit is coincident with the arbitrary bit position designated by the position designator; and a sampling oscilloscope which receives the trigger signal output from the trigger signal generating circuit of the trigger signal generating apparatus, sampling the frame signal with a trigger signal input timing as a*

reference timing and acquiring and displaying waveform information in a neighborhood of the arbitrary bit position designated by the position designator.

Ghiasi discloses a system and method of measuring extinction ratio and deterministic jitter of an optical transceiver comprising the features:

a trigger signal generating circuit which outputs a trigger signal at a timing when the position information output by the position information output circuit is coincident with the arbitrary bit position designated by the position designator (Ghiasi: see “Digitizing oscilloscope 220...transceiver 200 is measured” in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58)*; and*

a sampling oscilloscope which receives the trigger signal output from the trigger signal generating circuit of the trigger signal generating apparatus, sampling the frame signal with a trigger signal input timing as a reference timing and acquiring and displaying waveform information in a neighborhood of the arbitrary bit position designated by the position designator (Ghiasi: see “Digitizing oscilloscope 220...transceiver 200 is measured” in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Giorgetta by using the features, as taught by Ghiasi, in order to have a fast and accurate way to measure data dependent jitter (Ghiasi: column 2, lines 13 - 14).

As per claim 8, *wherein the sampling oscilloscope has a function of acquiring the waveform information in the neighborhood of designated arbitrary bit position for a plurality of times and averaging them thereby to display averaged waveform information in the neighborhood of the designated arbitrary bit position in such a manner that a phase variation dependent on a bit pattern of the frame signal can be measured while suppressing the phase variation of random noise type of the frame signal* (Ghiasi: see “Digitizing oscilloscope 220...transceiver 200 is measured” in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

a trigger signal generating circuit which outputs a trigger signal at a timing when the position information output by the position information output circuit is coincident with the arbitrary bit position designated by the position designator (Ghiasi: see “Digitizing oscilloscope 220...transceiver 200 is measured” in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58)*; and*

a sampling oscilloscope which receives the trigger signal output from the trigger signal generating circuit of the trigger signal generating apparatus, sampling the frame signal with a trigger signal input timing as a reference timing and acquiring and displaying waveform information in a neighborhood of the arbitrary bit position designated by the position designator (Ghiasi: see “Digitizing oscilloscope 220...transceiver 200 is measured” in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

As per claim 9, *wherein the frame signal having the predetermined bit rate is transmitted by a digital synchronous network* (Giorgetta: see "The S3062 is used...test equipment" in column 3, lines 56 – 59).

As per claim 10, *wherein the frame signal transmitted by the digital synchronous network is that of one of the digital synchronous transmission systems including a synchronous digital hierarchy (SDH), synchronous optical network (SONET) and optical transport network (OTN)* (Giorgetta: see "The S3062 is used...test equipment" in column 3, lines 56 – 59).

As per claim 11, wherein when the frame signal transmitted by the digital synchronous network is associated with one of the digital synchronous transmission systems including SDH, SONET and OTN, the bit position designated by the position designator is a specified part of an overhead of the frame signal of the digital synchronous transmission system (Giorgetta: see "The organization...in the header section" in column 10, lines 59 - 66).

As per claim 12, wherein the specified part of the overhead of the frame signal of the digital synchronous transmission system is not scrambled (Giorgetta: see "All the bytes...can be completed" in column 26, lines 46 – 49).

As per claim 13, *wherein the trigger signal generating apparatus further comprises a clock recovery circuit which receives the frame signal having the predetermined bit rate and recovers and outputs a clock from the frame signal* (Giorgetta: see Figure 1, CDR 14 and "Data is received from an optic fiber and passed through a clock/data recovery device (CDR)" in column 3, lines 36 – 37), *and*

wherein the sampling oscilloscope of the frame signal waveform observation apparatus acquires and displays waveform information of the clock recovered by the clock recovery circuit in addition to displaying the waveform information in a neighborhood of arbitrary bit position of the frame signal designated by the position designator (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

As per claim 14, *wherein the trigger signal generating apparatus further comprises a clock recovery circuit which receives the frame signal having the predetermined bit rate and recovers and outputs a clock from the frame signal* (Giorgetta: see Figure 1, CDR 14 and "Data is received from an optic fiber and passed through a clock/data recovery device (CDR)" in column 3, lines 36 – 37), *and*

wherein the sampling oscilloscope of the frame signal waveform observation apparatus has a function of acquiring waveform information in the neighborhood of designated arbitrary bit position for a plurality of times and averaging them and the function of acquiring the waveform information of the clock recovered by the clock

recovery circuit and averaging them, whereby a phase variation of random noise type is suppressed thereby to display the waveform information in the neighborhood of the designated arbitrary bit position of the frame signal and the averaged waveform information of the clock with the phase variation of random noise type suppressed (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

As per claim 15, *a trigger signal generating method comprising:*

receiving a frame signal having a predetermined bit rate and outputting a synchronous signal in synchronism with an input timing of leading data of the frame signal (Giorgetta: see Figure 10, steps 204 and 206; see also "The synchronization...synchronization bits" in column 9, lines 43 - 60);

receiving the synchronous signal and outputting position information indicating an input bit position of the frame signal (Giorgetta: see Figure 10, step 208; "Step 208 organizes...in header sections" in column 10, lines 31 - 42);

designating an arbitrary bit position of the frame signal (Giorgetta: see Figure 7 and "The organization...in the header section" in column 10, lines 59 – 66).

However, Giorgetta does not disclose the feature: *outputting a trigger signal at a timing when the position information is coincident with the designated arbitrary bit position.*

Ghiasi discloses a system and method of measuring extinction ratio and deterministic jitter of an optical transceiver comprising the feature: *outputting a trigger signal at a timing when the position information is coincident with the designated arbitrary bit position* (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Giorgetta by using the features, as taught by Ghiasi, in order to have a fast and accurate way to measure data dependent jitter (Ghiasi: column 2, lines 13 - 14).

As per claim 16, *wherein the frame signal having the predetermined bit rate is transmitted by a digital synchronous network* (Giorgetta: see "The S3062 is used...test equipment" in column 3, lines 56 – 59).

As per claim 17, *wherein the frame signal transmitted by the digital synchronous network is that of one of the digital synchronous transmission systems including a synchronous digital hierarchy (SDH), synchronous optical network (SONET) and optical transport network (OTN)* (Giorgetta: see "The S3062 is used...test equipment" in column 3, lines 56 – 59).

As per claim 18, *wherein when the frame signal transmitted by the digital synchronous network is associated with one of the digital synchronous transmission systems including SDH, SONET and OTN, the arbitrary bit position of the frame signal designated as a trigger signal generating position is a specified part of an overhead of the frame signal of the digital synchronous transmission system* (Giorgetta: see "The organization...in the header section" in column 10, lines 59 – 66).

As per claim 19, *wherein the specified part of the overhead of the frame signal of the digital synchronous transmission system is not scrambled* (Giorgetta: see "All the bytes...can be completed" in column 26, lines 46 – 49).

As per claim 20, *receiving the frame signal having the predetermined bit rate and recovering and outputting a clock from the frame signal* (Giorgetta: see Figure 1, CDR 14 and "Data is received from an optic fiber and passed through a clock/data recovery device (CDR)" in column 3, lines 36 – 37).

As per claim 21, *a frame signal waveform observation method comprising*:

receiving a frame signal having a predetermined bit rate and outputting a synchronous signal in synchronism with an input timing of leading data of the frame signal (Giorgetta: see Figure 10, steps 204 and 206; see also "The synchronization...synchronization bits" in column 9, lines 43 - 60);

receiving the synchronous signal and outputting position information indicating an input bit position of the frame signal (Giorgetta: see Figure 10, step 208; "Step 208 organizes...in header sections" in column 10, lines 31 - 42);

designating an arbitrary bit position of the frame signal (Giorgetta: see Figure 7 and "The organization...in the header section" in column 10, lines 59 - 66);

However, Giorgetta does not disclose the feature: *outputting a trigger signal at a timing when the position information is coincident with the designated arbitrary bit position; and receiving the trigger signal, sampling the frame signal with a trigger signal input timing as a reference timing and acquiring waveform information of the designated arbitrary bit position of the frame signal.*

Ghiasi discloses a system and method of measuring extinction ratio and deterministic jitter of an optical transceiver comprising:

outputting a trigger signal at a timing when the position information is coincident with the designated arbitrary bit position (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58)*; and*

receiving the trigger signal, sampling the frame signal with a trigger signal input timing as a reference timing and acquiring waveform information of the designated arbitrary bit position of the frame signal (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Giorgetta by using the features, as taught by Ghiasi, in order to have a fast and accurate way to measure data dependent jitter (Ghiasi: column 2, lines 13 - 14).

As per claim 22, *further comprising:*

acquiring the waveform information in a neighborhood of the designated arbitrary bit position of the frame signal having the predetermined bit rate repeatedly for a plurality of times averaging the waveform information in the neighborhood of the designated arbitrary bit position of the frame signal acquired for the plurality of times (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58); *and*

suppressing a phase variation of random noise type of the frame signal and displaying the phase variation dependent on a bit pattern of the frame signal in a measurable way, based on the waveform information in the neighborhood of the designated arbitrary bit position of the frame signal which have been averaged (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

As per claim 23, *wherein the frame signal having the predetermined bit rate is transmitted by a digital synchronous network* (Giorgetta: see "The S3062 is used…test equipment" in column 3, lines 56 – 59).

As per claim 24, *wherein the frame signal transmitted by the digital synchronous network is that of one of the digital synchronous transmission systems including a synchronous digital hierarchy (SDH), synchronous optical network (SONET) and optical transport network (OTN)* (Giorgetta: see "The S3062 is used…test equipment" in column 3, lines 56 – 59).

As per claim 25, *wherein when the frame signal transmitted by the digital synchronous network is associated with one of the digital synchronous transmission systems including SDH, SONET and OTN, the bit position designated by the position designator is a specified part of an overhead of the frame signal of the digital synchronous transmission system* (Giorgetta: see Figure 7 and "The organization...in the header section" in column 10, lines 59 - 66).

As per claim 26, *wherein the specified part of the overhead of the frame signal of the digital synchronous transmission system is not scrambled* (Giorgetta: see "All the bytes…can be completed" in column 26, lines 46 – 49).

As per claim 27, further comprising: receiving the frame signal having the predetermined bit rate and recovering and outputting a clock from the frame signal (Giorgetta: see Figure 1, CDR 14 and "Data is received from an optic fiber and passed through a clock/data recovery device (CDR)" in column 3, lines 36 – 37);

acquiring by sampling a waveform information of the clock recovered from the frame signal (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58); *and*

displaying the waveform information of the clock acquired by sampling (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

As per claim 28, *further comprising: receiving the frame signal having the predetermined bit rate and recovering and outputting a clock from the frame signal* (Giorgetta: see Figure 1, CDR 14 and "Data is received from an optic fiber and passed through a clock/data recovery device (CDR)" in column 3, lines 36 – 37).

acquiring, by sampling for a plurality of times, the waveform information of the clock recovered from the frame signal (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58);

averaging the waveform information of the clock acquired by sampling for a plurality of times (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is

measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58)*; and*

displaying, as related to each other, averaged waveform information of the clock and the averaged waveform information in the neighborhood of the designated arbitrary bit position of the frame signal in order to make it possible to measure a phase variation dependent on a bit pattern of the frame signal by comparison with the averaged waveform information of the clock while suppressing the phase variation of random noise type of the frame signal (Ghiasi: see "Digitizing oscilloscope 220...transceiver 200 is measured" in column 4, lines 6 - 38; see also "Turning to FIG. 4C...measurement is complete" in column 6, lines 5 - 58).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juvena W. Loo whose telephone number is (571) 270-1974. The examiner can normally be reached on Monday - Friday : 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER